

WHAT IS CLAIMED IS:

1 1. A medical device (10) comprising a tube (11), wherein the tube (11)
2 comprises:

3 a coil (14) in a stressed, radially expanded condition;
4 a braid (16) extending over at least part of the coil (14); and
5 a polymeric layer (18) positioned over and contacting at least the
6 coil (14);

7 the polymeric layer (18) maintaining the coil (14) in its stressed,
8 radially expanded condition.

1 2. The medical device (10) according to claim 1, wherein the polymeric layer
2 (18) maintains the coil (14) in its stressed, radially expanded condition by
3 adhesion to the coil (14).

1 3. The medical device (10) according to claim 1, further comprising an inner
2 liner (20) beneath and in contact with at least part of the coil (14).

1 4. The medical device (10) according to claim 1, wherein at least one of the
2 coil (14) and the braid (16) comprises a metal.

1 5. The medical device (10) according to claim 1, wherein the braid (16)
2 comprises a plurality of crossed wires (22).

1 6. The medical device (10) according to claim 5, wherein the wires (22) are
2 circular in cross-section.

1 7. The medical device (10) according to claim 1, wherein the coil (14)
2 comprises flat wire.

1 8. The medical device (10) according to claim 1, wherein the polymeric layer
2 (18) comprises at least one of nylon, polyurethane and PTFE.

1 9. The medical device (10) according to claim 8, wherein the polymeric layer
2 (18) is encased within an additional layer of heat-shrinkable tubing.

1 10. The medical device (10) according to claim 2, wherein the polymeric
2 layer (18) is thermally bonded to the coil (14).

1 11. The medical device (10) according to claim 3, wherein the inner liner
2 (20) comprises PTFE.

1 12. The medical device (10) according to claim 1, wherein the tube (11) has
2 an outer diameter no greater than about 2 mm.

1 13. The medical device (10) according to claim 1, wherein the coil (14)
2 extends distally beyond the braid (16).

1 14. The medical device (10) according to claim 1, wherein the polymeric
2 layer (18) comprises at least two discrete longitudinal segments (28 and 30)
3 of differing durometer.

1 15. The medical device (10) according to claim 1, wherein the device (10)
2 is an endoscope (32), and wherein the tube (11) is configured as an
3 endoscope sheath (34).

1 16. The medical device (10) according to claim 1, wherein the device (10)
2 is a single lumen balloon catheter (38), and wherein the tube (11) is
3 configured as a catheter shaft (40).

1 17. The medical device (10) according to claim 16, wherein the tube (11)
2 has a lumen (60) defined longitudinally therethrough, and wherein the device
3 (10) further comprises an inflatable balloon (44) mounted to the tube (11),

1 the balloon (44) having an interior (58) in fluid communication with the tube
2 lumen (60).

1 18. The medical device (10) according to claim 17, wherein the tube (11)
2 has a distal end (42) comprising a valve seat (46), and wherein the device
3 (10) further comprises an occluder (48) positioned in the tube lumen (60)
4 and moveable therein, the occluder (48) having a tip (50) engageable with
5 the valve seat (46) of the distal tube end (42) to seal the distal tube end (42)
6 and permit inflation of the balloon (44).

1 19. A medical device (10) comprising a tube (11), wherein the tube (11)
2 comprises:

3 a metal coil (14) in a stressed, radially expanded condition, the
4 metal coil (14) comprising flat wire;
5 a metal braid (16) extending over at least part of the coil (14);
6 a polymeric bonding layer (18) positioned over and contacting at
7 least the coil (14), wherein the polymeric layer (18) is heat-shrinkable tubing
8 comprising at least one of nylon, polyurethane and PTFE; and
9 an inner liner (20) beneath and in contact with at least part of the
10 coil (14), the liner (20) comprising PTFE;
11 wherein the polymeric layer (18) maintains the coil (14) in its
12 stressed, radially expanded condition by adhesion to the coil (14) by thermal
13 bonding to it; and
14 wherein the tube (11) has an outer diameter no greater than about
15 1 mm.

1 20. The improvement in a medical device (10) including a tube (11),
2 characterized in that the tube (11) comprises:
3 a coil (14) in a stressed, radially expanded condition;
4 a braid (16) extending over at least part of the coil (14); and
5 a polymeric layer (18) positioned over and contacting at least the
6 coil (14);

1 wherein the polymeric layer (18) maintains the coil (14) in its
2 stressed, radially expanded condition.

1 21. A tube (11) for use with a medical device (10), the tube (11) comprising
2 a coil (14) in a stressed, radially expanded condition; a braid (16) extending
3 over at least part of the coil (14), and polymeric material (18) positioned at
4 least over the coil (14); the polymeric material (18) at least in part
5 maintaining the coil (14) in its stressed, radially expanded condition.